

## *Utricularia sandersonii* (Lentibulariaceae), a new record for Australia

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### Abstract

Conn, Barry J.<sup>1</sup>, Brown, Elizabeth A.<sup>1</sup> and Fairley, Alan T.<sup>2</sup> (<sup>1</sup>National Herbarium of New South Wales, Royal Botanic Gardens and Domain Trust, Mrs Macquaries Road, Sydney, NSW 2000, Australia; <sup>2</sup>PO Box 148, Oatley, NSW 2223, Australia) 2004. *Utricularia sandersonii* (Lentibulariaceae), a new record for Australia. *Telopea* 10(4): 811–814. The species *Utricularia sandersonii* Oliver is recorded for the first time in Australia, from the Blue Mountains area of New South Wales. It belongs in section *Calpidisca* otherwise known from Africa, Madagascar, Mexico and India. A full description, illustration and a key to distinguish it from *U. uliginosa* and *U. lateriflora* are provided.

### Introduction

During November 2001, one of us (ATF) discovered a small population of what appeared to be a new *Utricularia* species in a Blue Mountains City Council reserve, south of Blackheath, New South Wales (Australia). It was not possible to fully evaluate the status of this taxon until recently, when flowers became available (on cultivated material). The identity of this species appears to be *Utricularia sandersonii*, a species native to South Africa (Taylor 1989). This species is commonly cultivated and it would appear to be a naturalised introduction in the Blue Mountains.

*Utricularia sandersonii* Oliver, Journ. Linn. Soc. 9: 155 (1867)

Small, perennial lithophytic herb, 20–40 mm high. Rhizoids numerous, capillary, to c. 10 mm long, to c. 0.3 mm wide. Stolons present, glandular. Leaves few, obovate, long-petiolate; lamina c. 10 mm long (including petiole), 2–3 mm wide, apex entire; venation indistinct, dichotomously branched. Traps few, on rhizoids and leaves, subglobular, stalked, 0.5–0.8 mm long; mouth slightly lateral to subterminal, dorsal appendage distinct, rounded, long-stipitate glandular, ventral appendage very short, forming a small stipitate glandular lip; internal glands 4-partite (lobes obloid, ± equal, 0.05–0.06 mm long, c. 0.01 mm wide) and widely spaced. Inflorescence erect, simple, solitary, 2–7 cm high, 1- to c. 4-flowered; peduncle terete; non-floral bracts ('scales' *sensu* Taylor 1989) basifixed, ovate, 0.7–1 mm long, c. 0.3 mm wide; pedicel 1.5–2 mm long; bracts triangular, c. 1 mm long, c. 0.5 mm wide, apex subacute; bracteoles 2, basifixed, c. 0.7 mm long, c. 0.1 mm wide, white with tinge of purple along their length, apex subacute. Calyx 2-lobed, cucullate; lower and upper lobes ovate to sub-circular, divergent, 2.2–2.4 mm long (upper lobe larger than lower), c. 1 mm wide, apex subentire to slightly irregular. Corolla 11–12 mm long, white with faint lilac tinge; spur curved forward (porrect) and directed slightly upwards, c. 10 mm long, cylindrical, slightly tapered, apex obtuse; lower lip obovate, c. 7 mm long, 4.5–5 mm wide, white, with green-yellow crescent-like marking near mouth (distinctly white-papillose medially between 'curve' of crescent - on 'palate' *sensu* Taylor 1989), more distally with two lateral (narrow) lilac markings, then with additional, but indistinct green-yellow marking medially, and most distally with broad, darker lilac marking (darker

laterally); lateral ridges 2, prominent, white; central ridges absent; margin slightly irregular to notched (crenate) distally; upper lip deeply 2-lobed, each lobe slightly obovate, divergent, 3.5–4 mm long, c. 1 mm wide, white with lilac strip medially. Staminal filaments curved, c. 1 mm long; anther locules subdistinct. Gynoecium: ovary ovoid, c. 1.2 mm long; style and stigma c. 2 mm long; stigma 2-lobed, lower lip semi-circular, upper lip deltoid, about as long as lower lip, receptive. Capsule unknown. (Fig. 1).

**Habitat:** This species grows on a wet, vertical sandstone rock wall with *Zoopsis setulosa* and *Riccardia crassa*, in the splash-zone of a waterfall. It also occurs with *Drosera binuata*, *Blechnum aubignium* and *Schizaea rupestris* nearby. This site is thought probably not to receive direct sunlight. The flowering time for this species is not known, except in cultivation. Plants 'grown-on' in cultivation flowered in November, December and April. Plants at the Blue Mountains site have not been observed flowering during November and December, but a few plants were observed to have old inflorescences (lacking flowers). No fruiting material has been observed in the wild.

**Distribution:** Native to South Africa. This species is widely cultivated by carnivorous plant growers.

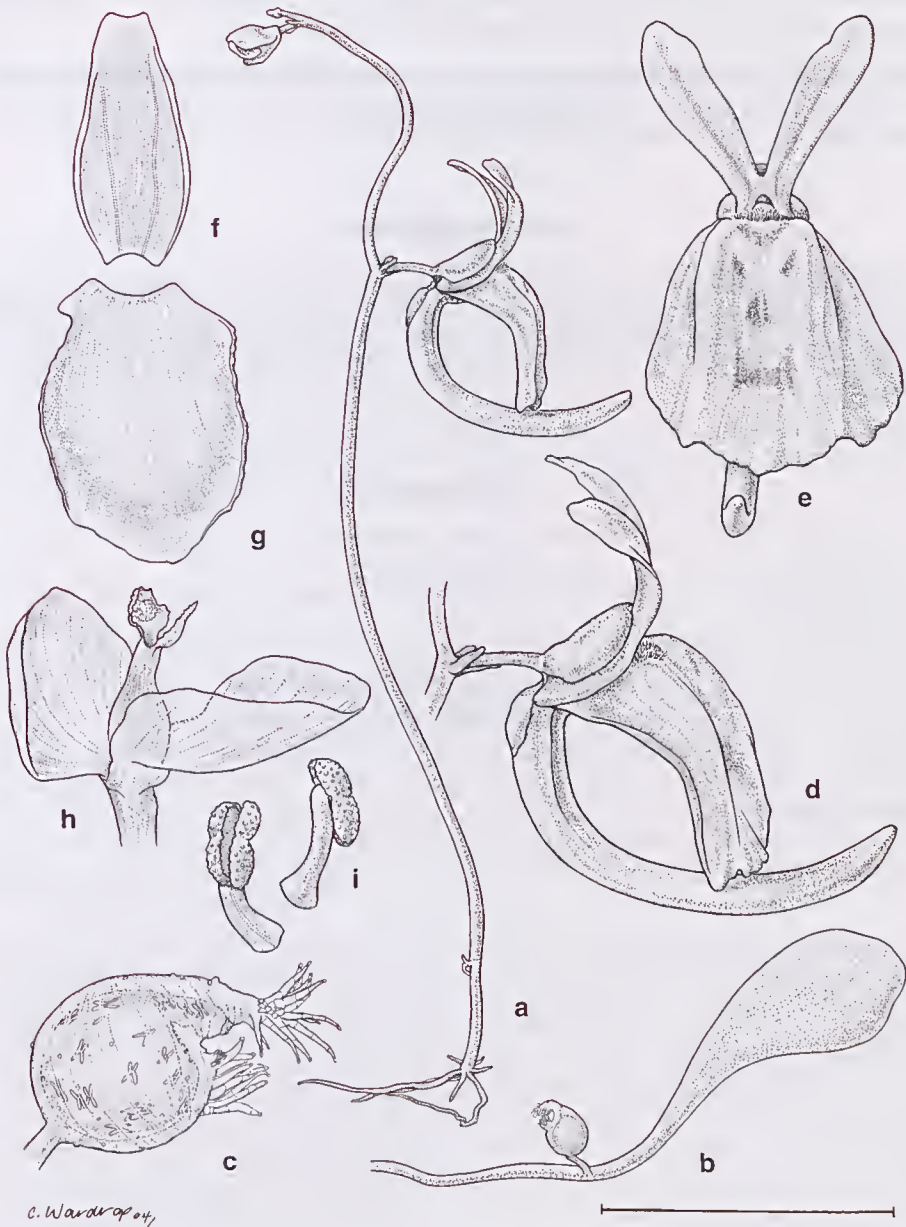
**Australian specimen examined:** Cult. Sydney, Australia ex Australia: New South Wales: Central Tablelands: Blue Mountains City Council Reserve, S of Blackheath, (orig. coll. A.T. Fairley s.n., November 2001), A.T. Fairley s.n. (NSW 612660).

**Notes:** This species belongs to the section *Calpidisca*. This section of eleven species was previously known from Africa and Madagascar, with *U. livida* E.Meyer extending to Mexico and *U. arenaria* A.DC. extending to India (Taylor 1989). The recording of *U. sandersonii* in the Blue Mountains represents the first record of this section from Australia. The trap appendage and ventral lip are fringed with rows of multicelled gland-tipped hairs; the 4-partite internal glands of the traps; and corolla coloration are all characteristic of section *Calpidisca*. The Blue Mountains material tends to differ slightly from plants of *U. sandersonii* from South Africa. For example, the former plants have slightly smaller traps (less than 1 mm long cf. 1–1.5 mm long), a shorter spur (c. 1.5 times length of lower lip of corolla cf. 2–3 times) that is more strongly curved upwards than in *U. sandersonii*. The morphology of this material is, however, similar to a form of *U. sandersonii* that is common in cultivation (including in Australia).

To include this species in the key to species of *Utricularia* occurring in New South Wales, the key in 'Flora of New South Wales' Volume 3 (Rowe and Brown 1992, p. 599) couplet 5 is modified to incorporate this species. Couplet 6 has also been modified to assist in distinguishing *U. lateriflora* from *U. uliginosa*:

- '5 Bracts basifixed, bracteoles present.
- 5A Spur c. 1.5 times length of lower lip of corolla; upper lip of corolla deeply divided into 2 divergent lobes ..... *U. sandersonii*
- 5B Spur about as long as lower lip of corolla or very slightly longer; upper lip of corolla more or less emarginate
- 6 Bracts much broader than bracteoles; spur directed at  $\pm 90^\circ$  to lower lip of corolla .... *U. uliginosa*
- 6\* Bracts not, or not much broader than bracteoles; spur directed forward and slightly curved upwards ..... *U. lateriflora*
- 5\* Bracts basisolite...'

**Conservation status:** Although the Blue Mountains site appears to be relatively natural and unmodified, the probability of this population being a garden escape cannot be dismissed. Taylor (1989, p. 230) reports that this species has 'proved to be easily cultivated in Europe and elsewhere'. This species is not known to have a long-



*C. Wardrop 04*

Fig. 1. *Utricularia sandersonii*. a, habit; b, leaf with attached trap; c, trap; d, flower in lateral view; e, flower in frontal view; f, lower lobe of calyx; g, upper lobe of calyx; h, gynoecium with pedicel and calyx (corolla removed); i, stamens. (all from Fairley s.n. Nov. 2001). Scale bar: a= 12.5 mm; b= 6 mm; c= 1 mm; d, e= 7.5 mm; f-i= 2.5 mm.



distance dispersing mechanism (Laurent Legendre pers. comm., 27 April 2004). Therefore, if this were a natural occurrence in Australia, it would represent an unusual disjunct extension of range for *U. sandersonii*. The geographic origin of the Blue Mountains population will be investigated by a comparison of molecular characteristics with those of other populations of *U. sandersonii*.

Only one population of this species is known from the Blue Mountains, consisting of several thousand plants, in an area of approximately  $0.3 \times 0.2$  m<sup>2</sup>. The impact that this apparently introduced species will have on the natural vegetation is unknown.

### Acknowledgments

Dr W.R. (Bill) Barker (AD) confirmed the generic identity of this material. Leahwyn Seed and Bob Coveny (both NSW) identified the associated liverworts. Catherine Wardrop (NSW) skillfully illustrated this species. We thank Dr Barry Rice (DAV) for clarifying the identity of this taxon as *Utricularia sandersonii* and its morphological variation.

### References

- Rowe, R.R. & Brown, E.A. (1992) Lentibulariaceae, in Harden, G.J. (Ed.), *Flora of New South Wales*, vol. 3: 598–601.
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